GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF GENERAL SERVICES

DESIGN-BUILD SERVICES
JANNEY ELEMENTARY SCHOOL ADDITION

Solicitation #: DCAM-14-CS-0002

Addendum No. 2
Issued: September 16, 2013

This Addendum Number 02 is issued by e-mail on September 16, 2013. Except as modified hereby, the Request for Proposals ("RFP") remains unmodified.

Item #1

Geotechnical Report: Please find attached a geotechnical report for the Janney site. The Department does not make any guarantee as to the accuracy of any information provided in this report, and Offerors are required to verify independently any information on which they intend to rely.

Item #2

Site Visit: An additional site visit will be held on **Wednesday, September 18, 2013 at 10:00 am**. Please meet Tom Henderson in the administrative conference room of Janney Elementary School. Please bring a valid driver's license or other government issued form of identification to comply with the school's security procedures.

Item #3

Form of Contract: The form of contract will be issued by subsequent addendum.

Item #4

The bid date remains unchanged. Proposals are due by **September 27, 2013 at 2:00 pm EDT**. Proposals that are hand-delivered should be delivered to the attention of: Annmarie McQueen, Contract Specialist, at **Frank D. Reeves Center, 2000 14th Street, NW, 8th floor, Washington, DC 20009**.

- End of Addendum No. 2 -

GEOTECHNICAL INVESTIGATION

JANNEY ELEMENTARY SCHOOL
BUILDING ADDITION
4130 ALBERMARLE STREET N.W.
WASHINGTON, D.C.

Prepared for:

Devrouax & Purnell Architects • Planners, PC
717 D Street, NW, Suite 500
Washington, D.C. 20004

Attention:

Ms. Barbara G. Laurie, AIA, NOMA
Associate

Prepared by:

THOMAS L. BROWN ASSOCIATES, P.C.
1400 Eye Street, Suite 440, N.W.
Washington, D.C. 20005

February 22, 2010

THOMAS L. BROWN ASSOCIATES, PC

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THOMAS L. BROWN, CWD, P.E., President

February 22, 2010

Devrouax & Purnell Architects · Planners, PC
717 D Street, NW, Suite 500
Washington, DC, 20004

Attn: Ms. Barbara G. Laurie, AIA, NOMA
Associate

RE: Janney Elementary School – *Building Addition*
4130 Albermarle Street, NW
Washington, DC
TLB Reference No. 09-052-PC

Dear Ms. Laurie:

Pursuant to your authorization, we have performed a geotechnical study in support of your design efforts on the referenced project. The following report summarizes the results of our subsurface explorations and laboratory testing and presents geotechnical recommendations for the planned building addition.

If you have any questions regarding this report or when we can be of further assistance on this or other projects, please do not hesitate to call us.

Yours very truly,

THOMAS L. BROWN ASSOCIATES, PC.

DISTRICT OF COLUMBIA
SOMBA NDETI
No. 10429
REGISTERED
PROFESSIONAL ENGINEER

Mabvuto Mkwayaya
Project Geologist/Engineer

Somba Ndeti, P.E
Project Manager

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ATTACHMENTS

1.0 PROJECT DESCRIPTION

The DC Office of Public Education Facilities Modernization (OPEFM) plans to construct an addition to the existing Janney Elementary School located at 4130 Albermarle Street, NW, Washington, DC. Site improvements will also include an underground parking garage and playfields on top of the garage. ***This report is for the Building Addition only***, and the geotechnical and construction recommendations for the proposed garage will be transmitted under separate cover. A Site Vicinity Map showing the location of the project site is presented as Drawing Number 1.

Devrouax & Purnell Architects · Planners, PC (D&P) is coordinating the design efforts of this project. Thomas L. Brown Associates, PC (TLB) of Washington, D.C., provided the requisite geotechnical input necessary to support the civil and structural engineering design efforts. ReStl Designers Inc. (ReStl) of Washington, D.C., is the structural engineer, while Delon Hampton & Associates, Chartered (DHA) of Washington, DC is the civil engineer.

1.1 Proposed Improvements

The planned addition will be a three-story structure with a partially submerged basement level to house the Art and Music room, Library, Science, multi-purpose/Physical Education/Auditorium room, and Cafeteria, among other uses. The addition will have a foot-print area of 34,000 square feet. A plaza (Upper Plaza) is planned on the south and north sides of the addition at Elevation 405.52 or less. A Lower Plaza is planned on the west side will have a finished floor elevation of 393.17 feet or less. A ramp and/or a stair connect the Upper Plazas and Lower Plaza. A maximum 3-4 foot high wall will feature west of the Lower Plaza while a maximum 8.5 foot high wall that tapers off on both ends to match adjacent final grades will feature on the south side of the south Upper Plaza.

1.2 Existing Conditions and Grades

The site currently consists of the existing Janney Elementary School built in 1925 which is an approximately 43,400 square foot, three-story brick structure with a basement. The proposed addition will be constructed to the west and southwest of the existing building. Portions of the site are currently occupied by classroom trailers, a garden, a playground, concrete sidewalks, and a few trees. Within the site, existing surface grades vary from approximately Elevation 404.0 feet in the eastern portions of the site to elevation varying from approximately 382.0 to 390.0 respectively from the northwest to the southwest corner of the property along 42nd Street, NW.

The basement floor elevation of the proposed building addition has been established at Elevation 393.17 feet; hence earthwork will be necessary to bring the existing grades to the design subgrade elevations and final grades respectively within and outside the proposed structure. Cut conditions are anticipated over much of the building footprint.

1.3 Building Loads

The maximum proposed column load for the building addition, as provided by ReStl, is 500 kips and the Wall load is approximately 6 kips/ft.

1.4 Scope of Services

TLB's scope of services included the following:

- Meetings and coordination with design team.
- Review of geotechnical data, if any is available.
- Formulation of the field investigation program.
- Coordination of utility clearances/permits.
- Field Explorations.
- Performing visual classification of the retrieved soil samples.
- Performing laboratory tests on representative samples.
- Analysis of test results as they pertain to the aforementioned structure.
- Preparation of this report describing the conditions encountered and providing recommendations for the geotechnical-related aspects of the proposed development.

The following sections summarize the activities, conclusions, and recommendations resulting from TLB's efforts.

2.0 EXISTING INFORMATION

2.1 Geologic Setting

Albermarle Street, NW, at 42nd Street, NW Washington DC lies within the Piedmont Physiographic Province. The Atlantic Coastal Plain bounds the Piedmont province on the east. The boundary between the Coastal plain and Piedmont Plateau is sinuous and ill-defined being marked mainly by the feathering out of the softer cretaceous formations as they lap on to the harder crystalline rocks of the Piedmont Plateau. This boundary is known as the Fall line. The low undulating hills of the Piedmont gradually decrease in elevation from the Fall Line to the lowland areas near the Potomac River. The Eastern division of the Piedmont province is underlain by a complex series of metamorphosed rocks including gneisses, slates, phyllites, schists, marble, granitic and gabbroic rocks with varying resistances to erosion and structural relationships. The Western division is also underlain by similar metamorphic rocks but less strongly metamorphosed than those of the eastern division.

According to the US Department of the Interior's geologic map of Washington, DC and vicinity (1949), the soils that underlie Janney Elementary School and its environs are part of the Oligoclase-Mica facies of the Wissahickon Formation of the Tertiary Period Piedmont Province. The Wissahickon Formation belongs to the Eastern Division of the Piedmont Province and

consists of quartz-mica schist, phyllite and quartzite with more or less biotite and chlorite, clinozoisite-epidote, and garnet. The garnetiferous quartz- muscovite schist of variable composition was encountered in some layers, with variable degrees of oxidation. Brown and grayish, flaky textured feldspars and micas were also encountered.

Thin bands of quartzite represented by sandy beds that were intercalated between the silty and shaly strata from which the schists were developed were encountered. Over time, the volcanic rocks of the Wissahickon Formation were subjected to weathering and erosion at its surface. Some of the weathered material was washed away to nearby rivers and transported to the sea. Due to varying resistances of the materials, the more crumpled and distorted schists and silts were interbedded with more resistant and less deformed shaly quartzite. Materials encountered at the site are residual sediments transported in different sizes and at various gradients with complex stratigraphy, morphology and hydrology.

3.0 FIELD INVESTIGATIONS

TLB's field exploration efforts included:

- Securing the requisite permits and coordinating utility clearances with Miss Utility and private utility locator A. Morton Thomas Associates, Inc., of Rockville, MD that was engaged by TLB.
- Coordinating preparation of the boring plans and stake out of the borings at the respective exploratory locations.
- Coordinating with the Principal and afterwards with D&P regarding access to the site.
- Mobilizing a truck mounted Acker AD-2, track mounted Acker Soil Scout, truck mounted CME 45C, and truck mounted CME 75A drill rigs to perform the planned field explorations.
- Drilling seven (7) test borings (i.e. B-1, B-1A, B-2 through B-6) for the building addition at locations shown in Drawing Number 2, Site Exploration Plan).
- Coring through the asphalt or concrete where necessary.
- Performing standard penetration testing (SPT) in accordance with ASTM D 1586 typically at 2.5-foot intervals within the first 10 feet below existing grades and at 5.0-foot intervals thereafter.
- Determining depth to groundwater table during and upon completion of drilling.

Following the completion of geotechnical explorations, each of the borings was backfilled with auger cuttings and the pavements restored.

4.0 SUBSURFACE CONDITIONS

Logs describing the subsurface soils and groundwater conditions encountered at each of the boring locations during this study are presented as "Records of Soil Exploration" in the first section of Appendix A, Records of Soil Exploration. The descriptive terminology used to

classify the soils encountered during this study is summarized on the first page of Appendix A. The Generalized Subsurface Profiles presented as Drawings Number 3 and 4 show approximate subsurface conditions expected to be encountered within the project site. The following paragraphs narrate the subsurface conditions encountered:

4.1 Subsurface Soils

The generalized subsurface profile and the individual records of soil exploration indicate that the soil conditions are variable. They are described as follows:

Topsoil – A 2.0 to 4.0-inch thick layer of topsoil was encountered at the top of Borings B-1 through B-5.

Asphalt Concrete - A 6.0-inch thick asphalt concrete pavement section with no base was encountered in Boring B-6.

Fill - Fill material was encountered below the topsoil in Borings B-1, B-2, B-3 and B-5, and extended to depths of 2.0 to 10.0 feet below the existing ground surface. The fill material generally consists of sand and silt, with varying amounts of clay and gravel, and occasional root fragments. Traces of metal debris were encountered within the fill soils in Boring B-3. The SPT-N values recorded within the fill material ranged from 4 to 18 blows per foot (bpf), suggesting very loose to medium dense consistencies in granular soils and soft to very stiff consistencies in fine grained soils.

Silt and Clay – Silt and clay soils with varying amounts of sand, gravel and mica were encountered as strata or seams beneath topsoil, pavement, fill material, or sand in Borings B-1A, and B-2 through B-6. The SPT N-values within the silt/clay ranged from 4 to over 50 bpf, suggesting very soft to hard consistencies.

Sand - Sand with varying amounts of clay, silt, and gravel was logged below the topsoil, pavement, clay and/or silt in all the borings. The SPT N-values within the sand ranged from 4 to over 61 bpf, suggesting very loose to very dense in-situ conditions

Gravel – Gravel with varying amounts of sand, silt and clay was logged in Borings B-1 and B-2. The gravel layer was encountered from depths ranging from 4.0 feet to 15.0 feet. The SPT N-values within the gravel ranged from 17 to over 62 bpf, suggesting medium dense to very dense in-situ conditions.

4.2 Groundwater

During the course of our explorations, water was not observed in any of the borings with the exception of Boring B-5 where groundwater was encountered at approximately elevation 368.5 feet. However, no groundwater was observed upon completion of Boring B-5. Wet soils were encountered in Borings B-1A at approximately Elevation 373.5 feet and in B-6 at approximately Elevation 382.0 feet which could be an indication of perched of trapped water conditions.

Because of the presence of clay and silt layers, the site has the potential of having perched or trapped water conditions. In addition, seasonal and/or long-term fluctuations of the site's groundwater levels should be anticipated.

5.0 LABORATORY TESTS

Laboratory testing was conducted to aid in our determination of geotechnical parameters necessary for the design of foundations. Representative soil samples retrieved from each of the SPT split spoons were preserved in glass jars. All of the soil samples were visually classified by an engineer/geologist, and then representative SPT samples were subjected to a laboratory testing program comprised of general index tests that included natural moisture contents – ASTM D 2216, Atterberg limits – ASTM D 4318 as well as gradation analysis – ASTM D 422.

Laboratory test results are summarized as follows:

- Natural moisture contents for the subgrade soils varied from 3.4% to 24.2%, with an average of 15.3%.

- Gradation analysis tests performed on selected samples indicate that the soils have between 47% and 100% passing Sieve #4 and about 15% to 63% passing #200 sieve.

- Liquid limits ranged from 32% to 57% whereas Plasticity indices were between 10% and 14% on the representative samples.

Appendix B presents a compilation of the geotechnical laboratory tests results that were completed during this study. Included in that appendix is Summary of Laboratory Test Results and Atterberg Limits' Results, followed by plots of the gradation data.

The remaining soil samples are being temporarily stored in our Glen Burnie, Maryland laboratory and are available for review. Forty-five (45) days following the submittal of this report, however, those samples will be discarded unless other arrangements are made.

6.0 ENGINEERING ANALYSIS

Engineering analysis was performed to identify and/or determine soil parameters attainable for the on-site materials encountered within the depths of our explorations for the design and construction of the proposed structure. Subsurface conditions that may impact the foundations of the planned construction were reviewed and analyzed.

6.1 Foundations

The subsurface conditions for the proposed building addition were characterized by Borings B-1 through B-6. Subsurface soil and groundwater conditions have been previously described in Section 4.0, Subsurface Conditions. Drawing Numbers 3 and 4 attached herewith illustrate the anticipated subsurface profile. Those profiles indicate that the area is blanketed by a fill layer

varying in thickness from 2.0 to 10.0 feet, sand with varying amounts of silt and/or clay, and clay and silt soils. The predominant soils logged within the depth of our exploration were clay, clayey sand, silt and silty sand. The design parameters for the foundations are based on the in-situ and laboratory test results presented herein.

The basement floor elevation of the proposed building addition is at Elevation 393.17 feet. Poor/marginal to competent fill soils were generally encountered at the site below typical footing embedment depths in almost 50 percent of the borings and the poor and marginal soils will require removal and replacement with structural fill. Due to the presence of silt and clay in some of the borings, the anticipated bearing strata for the footings is generally minimum 30 inches below adjacent finished grades for frost protection and bearing capacity reasons. However, deeper embedment of footings or the removal of unsuitable fill soils and their replacement with structural fill will be required at certain locations.

Low SPT N-values of 10 bpf or less and existing fill material with low SPT N-values generally below 10 bpf were recorded below typical footing elevations within Borings B-1 and B-5. These unsuitable soils were recorded to elevations as deep as Elev. 385 feet. These soils that are deemed unsuitable should be removed and replaced with structural fill.

However, the fill material at Boring B-3 appeared relatively stiffer with N-values ranging from 17 to 18 bpf. The fill soils within the vicinity of Boring B-3 should be proof rolled and inspected for their suitability and their bearing capacity should be verified. Any soft spots identified should be densified in place. If they cannot be densified in place, the fill should be removed and replaced with structural fill placed in accordance with the earthworks sections of this report.

The basement floor elevation of the proposed building addition is lower than the prevailing grades in parts of the site and cut conditions are expected. Conversely, fill conditions are anticipated in the northwestern area of building footprint and west plaza. The floor slab may be designed as a slab-on-grade supported on successfully proof-rolled natural soils or newly installed structural fill.

For natural soils with N-values exceeding 11 bpf, a minimum allowable bearing pressure of 3.0 ksf can be available. Foundations established on structural fill can be designed based on the same bearing capacity.

7.0 CONCLUSIONS/RECOMMENDATIONS

Field exploratory services for the proposed building addition at Janney Elementary School were conducted generally inside the proposed building addition footprint to determine how soil and groundwater conditions might impact the design and construction of the foundations and other subgrade elements of the addition. Based on the subsurface conditions encountered and the laboratory tests that were performed, poor and marginal to competent subsurface conditions were generally encountered throughout the site. The site is covered with topsoil, asphalt, and concrete at the surface, while the predominant subsurface materials are clay, clayey sand, silt and silty sand. Groundwater was encountered in Boring B-5 at approximately Elevation 368.5 feet.

However, no groundwater was observed upon completion of Boring B-5. Wet soils were encountered in Borings B-1A at approximately Elevation 373.5 feet and in B-6 at approximately Elevation 382.0 feet which could be an indication of perched or trapped water conditions. Because of the presence of clay and silt layers, the site has the potential of having perched or trapped water conditions. Our conclusions / recommendations for the geotechnical aspects of the proposed project are expounded as follows:

7.1 Foundations

Foundation bearing capacity and type of foundation was analyzed based on the in-situ test results, existing conditions, laboratory test results, proposed finished floor elevations and proposed final grades. Whereas competent natural soils (natural clay, silt and/or sand) with SPT N-values generally greater than 10 bpf were encountered below the potential footing bottoms at most boring locations, the presence of unsuitable soils with SPT N–values less than 10 bpf or consisting of existing fills are noted in some borings and will require subgrade preparatory work. Based on the borings, undercutting of poor in-situ natural soils and fill soils, and replacement with structural fill will be required. We recommend that the undercut areas be extended as practicable to expose firm existing fill soils or natural soils. Undercutting should extend horizontally from the outside edge of building foundations by a distance equal to the depth of the undercut. The actual undercut depths will depend on the site conditions, however the following preliminary depths of undercut depths are recommended:

Table No.1: - Undercut Depths

Vicinity of Boring No.	Bottom of Undercut Elev.
B-1	385.0
B-2	N/A
B-3	Verify Existing Fill
B-4	N/A
B-5	385.0
B-6	N/A

We recommend that a geotechnical engineer be on-site to monitor the undercutting to confirm that the excavations are extended to sufficient depths and to determine the suitability of the exposed subgrade materials to remain in-place. Structural fill should be placed in accordance with the earthwork section of this report. Based on the subsurface conditions and the laboratory test results, it is recommended to use **an allowable bearing capacity of 3.0 ksf for design** where footings are established on natural soil or structural fill, as recommended herein.

With footings founded within natural soils at the recommended elevations or within structural fill where unsuitable soils were encountered below footing bottom, the expected settlements are limited to less than 1.0 inch. Differential settlements anticipated within the individual spread footings are less than 0.5 in. Care shall be exercised to ensure that the soils encountered at the founding grade remain dry.

Stepped down and/or adjacent column footings should be positioned outside of a 45° slope line extending outward from the underside of the nearest adjacent footings. Competent undisturbed natural soil and/or compacted structural fill should exist everywhere within this zone of footing influence. Strict adherence to the 'Earthwork' section of this report is recommended. Regardless of the computed footing sizes, it is recommend all continuous footings have a minimum width of 18.0 inches. It is also recommend that isolated column footings should have a least plan dimension of 24.0 inches. Due to the presence of the silt within the footing bearing stratum in some borings coupled with the low SPT N values less than 10 bpf encountered in the upper part of the borings, it is recommended that the footings be founded minimum 30 inches below final exterior grades and within the competent natural material or the constructed embankment.

7.2 Slab-on-Grade

The basement floor for the proposed building addition may be designed as a slab-on-grade. The slab will be supported on the existing subgrade soils, new structural fill or successfully proof-rolled existing fills. Slab subgrade soils are often disturbed after final grading due to ongoing construction activities and weather conditions and as a result lose their support capabilities. We recommend that slab subgrades that have been disturbed be proof-rolled immediately prior to construction of the slab. Should any yielding areas be located, it is recommended that those areas be treated in strict adherence to the 'Earthwork' section of this report.

It is recommended that a minimum 4.0-inch layer of porous washed stone, consisting of gravel or crushed rock, be placed immediately beneath all at-grade slabs. In those sections where at-grade slabs are placed below finished exterior grades, perimeter footing drains shall be required. These areas are along the east, south, north and a portion of the west walls. In areas where at-grade slabs are placed above the finished exterior grades, perimeter footing drains shall not be required. We recommend that surface runoff should be directed away from all structures. A polyethylene membrane or similar vapor barrier should be used to separate the concrete from the porous stone or subgrade. Although no unusual loads are expected, we recommend at-grade concrete slabs be at least lightly reinforced with a medium weight wire mesh.

7.3 Subgrade Walls

The elevation of the basement floor is provided as Elevation 393.17 feet compared to Upper Plaza (south and north side of addition) surface at Elevation 405.82. Subgrade walls will be required along the perimeter of the building where the existing surface elevations are higher than the proposed basement floor elevations. These are walls along the east, south and north side of the addition.

We recommend the use of reinforced concrete walls for all subgrade walls. Backfills placed against those walls should be granular and compacted to at least 95% of the maximum dry unit weight as determined by a Standard Proctor Test. Compaction with hand operated equipment should be required within 3 feet of those walls to avoid over stressing subgrade walls. Backfills against the walls must meet the requirements recommended in the Earthworks section of this

report. It is recommended to use #57 stone or similar drainable material behind the wall. Use of prefabricated drainage composite is acceptable. Soils to be retained are sands, silt or clays below grade. We recommend rigid subgrade walls be designed based on at-rest earth pressure conditions and at-rest Earth Pressure Coefficient, **K_o, equal to 0.50 and unit weight of 120 pcf**.

7.4 Site Retaining Walls and Temporary Support of Excavation

Cuts of up to 10 feet will be required to achieve the proposed subgrade elevations in portions of the site. Additional excavation will be required during the installation of the foundations and removal of unsuitable soils. At those depths, support of excavation (SOE) will be required, and will depend on the site grading plan. Soils expected to be supported are predominantly sands, silt or clays. Where unsupported, we believe temporary slopes for excavations are feasible based on available space, and we recommend unsupported slopes be no steeper than 1.5H:1.0V. As for the installation of utilities, a trench mule or other approved movable structures should suffice in the support of the excavation trenches as long as they can support the subgrade materials to the desired depths.

We recommend all temporary excavation supports be designed for the appropriate active and/or passive earth pressure conditions. Based on the mixture of the clay, sand, and silt soils that are expected to be supported, it is recommended to use an angle of internal friction of 28 degrees, and corresponding **active and passive earth pressure coefficients, K_a and K_p of 0.36 and 2.77** respectively to compute lateral pressure for the soils exposures. A unit weight of 120 pcf is recommended for the determination of the lateral forces. A friction coefficient of 0.5 is recommended at the base of footings. For the retaining walls, frictional resistance should be assumed to be mobilized first and to its full capacity before passive resistance is developed. In addition, passive resistance in the top 2 feet of soil in front of the wall shall not be used.

Surcharge loads occurring within a horizontal distance equal to the height of the excavation should also be superimposed on the recommended earth pressure loads. The surcharge should be computed as a uniform lateral pressure equal to 0.36 times the magnitude of the surcharge. It is recommended that the contractor be required to engage a professional engineer registered in the District of Columbia to design and seal the plans and drawings for all temporary support of excavation structures.

7.5 Construction and Groundwater Concerns

During the course of our explorations, water was not observed in any of the borings with the exception of Boring B-5 where groundwater was encountered at approximately Elevation 368.5 feet. However, no groundwater was observed upon completion of Boring B-5. Wet soils were encountered in Boring B-1A at approximately Elevation 373.5 feet and in Boring B-6 at approximately Elevation 382.0 feet. The soil conditions encountered at the site are favorable for perched water conditions to occur and are of poor drainage characteristics. Water encountered at elevations varying from 368.5 feet to 382.0 feet is not expected to impact construction negatively. However, moisture build-up can be expected during or following periods of heavy and/or sustained inclement weather. After cuts are made to subgrade elevations, it is

recommended to protect subgrades as quickly as practicable. Accordingly, the contractor should maintain the integrity of the subgrade soils by keeping the excavation dry by precluding intrusion of surface runoff into the subgrade or backfill soils, and by precluding traffic.

Surface runoff can be controlled by maintaining a positive slope from the building area. If maintaining a positive slope is not feasible, berms of ditches can be installed along the perimeter of the work area to direct surface runoff away from the site and to sump pits from where it would be pumped out to approved locations.

Additionally, it is recommended that all areas within the exterior of the buildings be sloped away from the buildings to preclude flow of any surface runoff toward the buildings. A positive slope should always be maintained to convey water away from the building.

7.6 Site Classification as per International Building Code

The Shear strength of the site soils was correlated from SPT test data and laboratory tests. The SPT N-values were generally between 15 and 50 in the explored strata. Based on empirical correlations using SPT data for the on-site soils, general index parameters determined on representative samples from those soils, and our knowledge of the local geology, the soils encountered at this site fall under **Class D** per Table 1615.1.1 (Earthquake Loads - Site Ground Motion) of the 2006 International Building Code.

7.7 Earthworks

Moderate cuts of more than 10 feet are expected during subgrade preparation for the proposed building addition.

We recommend inspection of all subgrade materials during all site grading operations and foundation construction activities. All deleterious material encountered during clearing and site excavations should be removed. For slabs, we recommend the existing natural and fill soils exposed at design subgrade elevations be proof-rolled and/or densified in-place with an approved roller or other equipment while being inspected by a Geotechnical Engineer or an experienced engineering technician. Any soft or loose zones that are identified which cannot be densified in-place should be undercut to a depth, length and width as directed by the inspecting Engineer. Undercut volume shall be backfilled and new embankments build to grade with structural fill meeting Unified Soil Classification (USCS) of SC or coarser, compacted with an appropriate sheep's foot or vibratory compactor, and thereafter be protected and maintained until pavement or foundation construction.

We recommend the structural fill be compacted as follows:

- Structural Fills -- All fills placed directly below or within the zone of influence of any bearing foundation or structural slab - 95% AASHTO T-180 (ASTM D-1557).
- Structural Fills – Fills within 3 feet of Subgrade or Retaining Walls - 95% AASHTO T-99 (ASTM D-698).

Regardless of the category, we recommend that all site fills be placed in essentially horizontal layers or lifts having a minimum loose lift thickness commensurate with the equipment being utilized to perform the compaction. In no case should those lifts exceed eight (8) inches. Each lift should be uniformly compacted to equal or exceed the specified minimum percentage of the maximum dry unit weight.

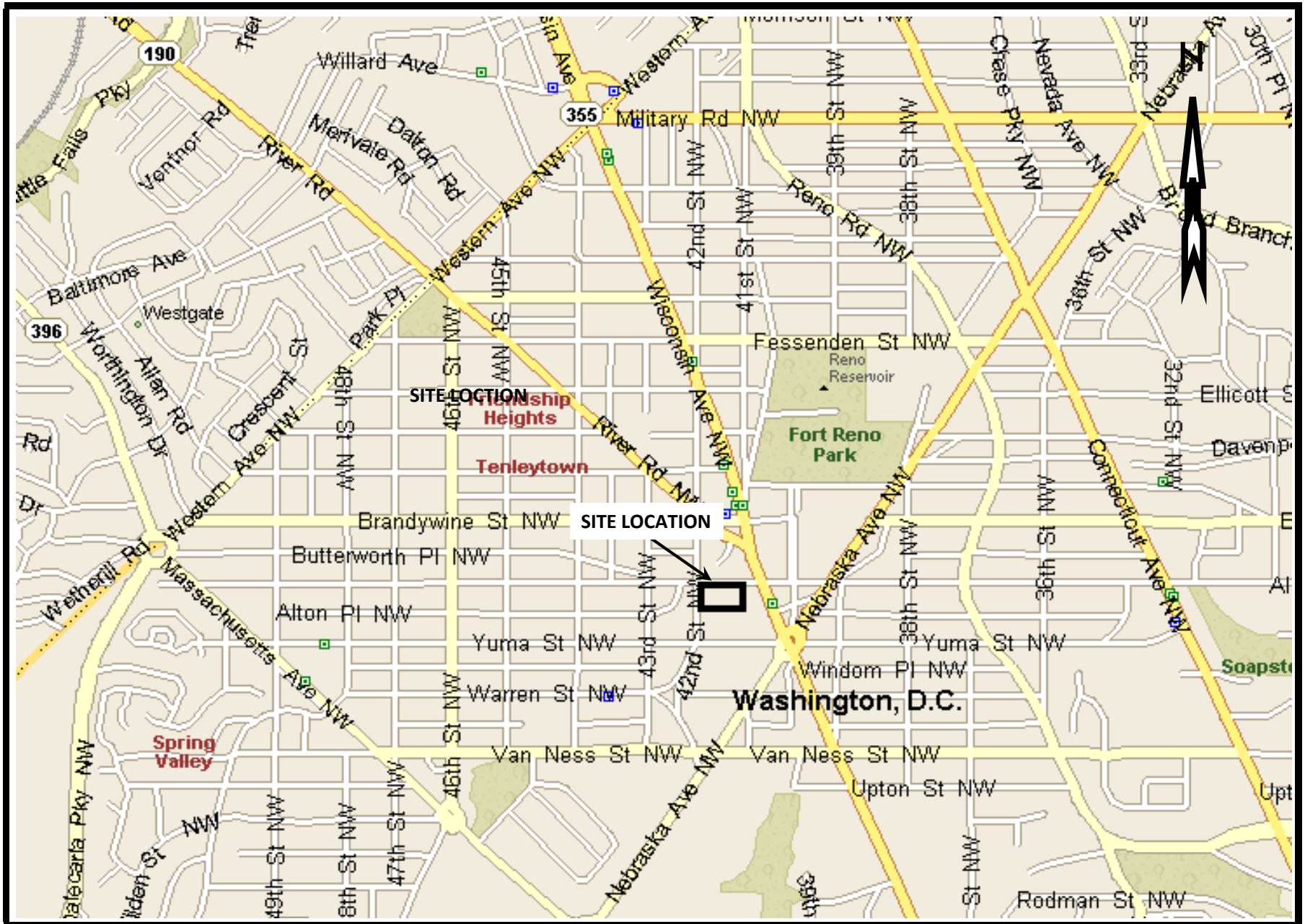
All offsite borrow materials or imported material that may be borrow material, select fill or other approved material shall consist of soils meeting Unified Soil Classification System (USCS) of SC or coarser. All soil materials that fall within the USCS type ML, CL, OL, MH, CH, OH, PT, as well as material containing organic matter, ashes, cinders, refuse, frozen or other unsuitable materials are prohibited for use as backfill. Material used in backfill shall be a well-graded soil-aggregate mixture with a Liquid Limit (LL) not greater than 30 and a maximum Plasticity Index (PI) of 10. Therefore, soils to be excavated at the building pad are deemed generally unsuitable for reuse as structural fill as only small deposits of suitable soils are minable.

Specifications should require slopes of exposed surfaces be maintained to facilitate surface runoff away from load bearing areas and to prevent ponding of surface water. If ponding of surface water does occur, it should be removed by pumping, ditching or as otherwise directed by the inspecting geotechnical Engineer. During periods of anticipated inclement weather, exposed surfaces shall be graded and sealed to preclude infiltration of surface water. Subgrades, which become disturbed due to inclement weather or construction traffic and require over-excavation, should be reworked at no additional cost to the owner.

8.0 LIMITATIONS

All subsurface and field investigations require the extrapolation of limited amounts of data based on general geologic knowledge. This report has been prepared to aid in the evaluation of the site. This report is intended to assist Devrouax & Purnell Architects · Planners, PC and/or owner with the design aspects of the building and utilities as well as the earthwork related portions of the project based upon our understanding of the design details, criteria, and utilization of the planned facilities as outlined herein. The water level observations and geologic descriptions presented on the accompanying logs have been made with reasonable care and accuracy, but must be considered only an approximate representation of subsurface conditions to be encountered beyond a particular exploratory location.

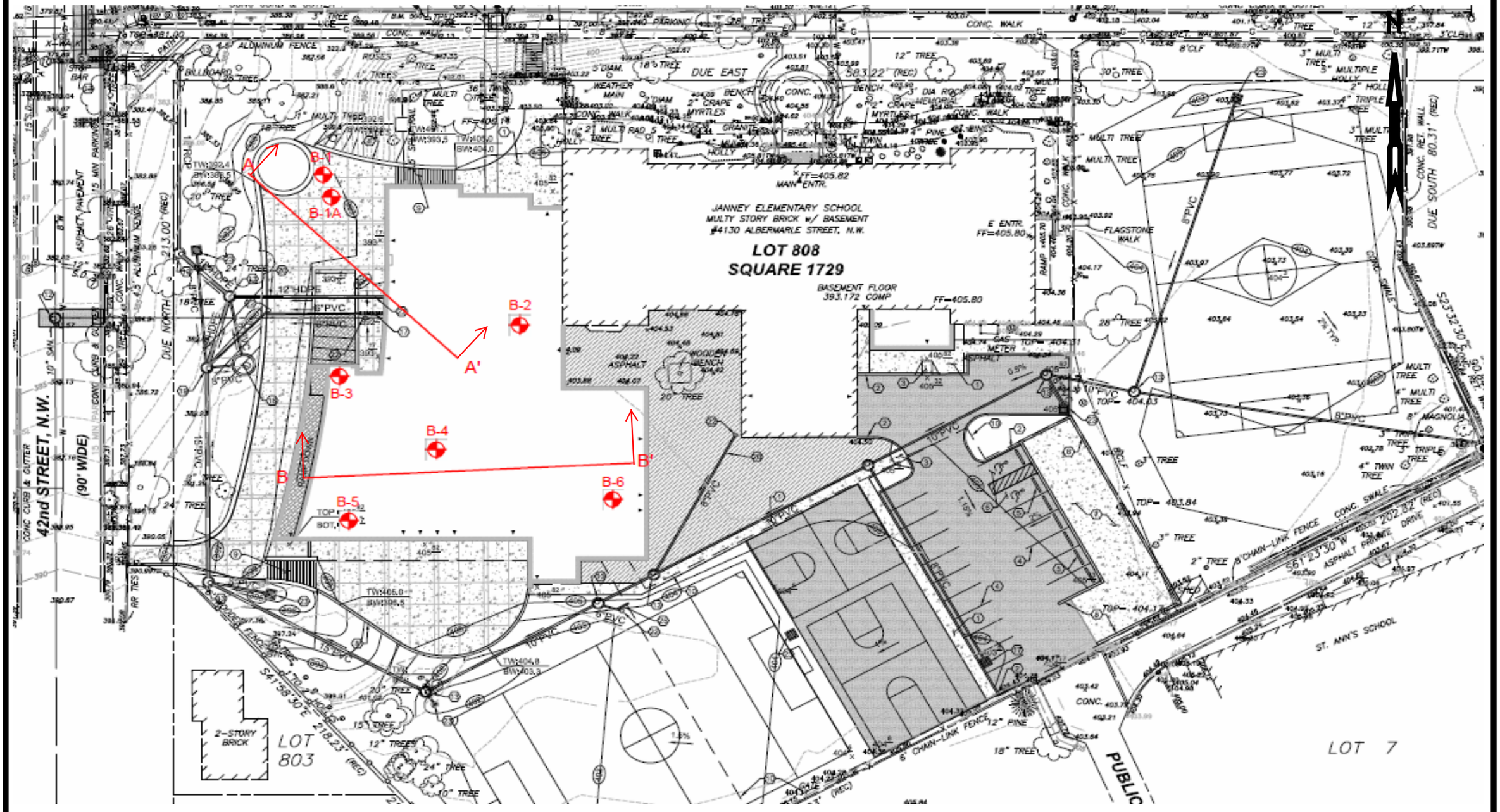
We recommend that a Geotechnical Engineer or a technician under his direction be retained during construction to monitor subgrade preparation and construction and to evaluate general construction techniques as they may affect foundations and utilities at the site. The Engineer or Technician should be instructed to monitor subsurface conditions encountered during construction to see that those conditions are compatible with the findings of this study. If significant variations are encountered or if the proposed locations or designs are altered, we should be contacted and provided the opportunity to appropriately review and/or modify these recommendations.



JANNEY ELEMENTARY SCHOOL - BUILDING ADDITION
4130 ALBERMARLE STREET NW, WASHINGTON, DC

SITE LOCATION PLAN

DRAWING NO. 1



TLB	JANNEY ELEMENTARY SCHOOL - BUILDING ADDITION 4130 ALBERMARLE STREET NW, WASHINGTON, D.C.	BORING LOCATIONS DRAWING NO. 2

WEST

EAST

B-5

B-4

B-6

ASPHALT

TOPSOIL

EXISTING GRADES

BASEMENT FLOOR ELEV. 393.17 FEET

Elevation (ft)

405

400

395

390

385

380

375

370

FILL

SAND

SILT

CLAY

SAND

SILT

CLAY

B-5		B-4		B-6	
N		N		N	
5		5		7	
4		4		10	
4		9		4	
8		18		32	
12		42		28	
32		8		60	
50		19		12	
50/5"		23		20	
		79			

LEGEND

▽ – Depth water was encountered during drilling.

▼ – Groundwater depth monitored after boring completion or after 24 hours.

N – Standard Penetration test Resistance in Blows per foot

Note: Strata changes shown on this profile represent generalizations based on average conditions indicated by soil test borings.

GENERALIZED SUBSURFACE PROFILE
Section B-B'

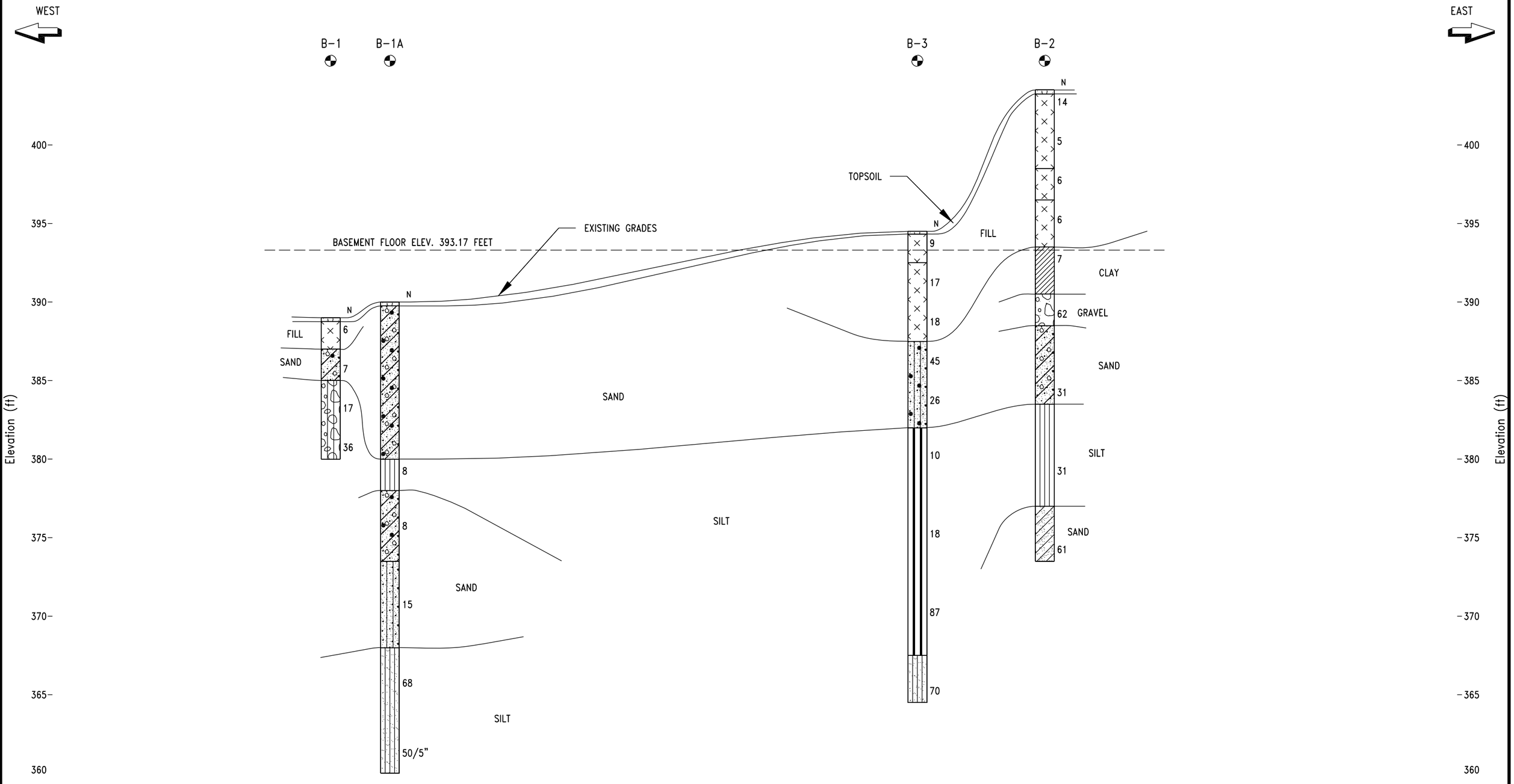
Scale: 1H = 2V	Date: 1/14/10	Drawn By: MM

Janney Elementary School – Building Addition
4130 Albermarle Street NW, Washington, DC

THOMAS L. BROWN ASSOC, P. C.
Washington, DC

Drawing No: 4

11417 STRATIGRAPHY W IDW BORING LOGS.GPJ MDSHA-MERGED.GDT 1/14/10



LEGEND

▽ – Depth water was encountered during drilling.

▼ – Groundwater depth monitored after boring completion or after 24 hours.

N – Standard Penetration test Resistance in Blows per foot

Note: Strata changes shown on this profile represent generalizations based on average conditions indicated by soil test borings.

GENERALIZED SUBSURFACE PROFILE
Section A-A'

Scale: 1H = 2V	Date: 1/14/10	Drawn By: MM

Janney Elementary School – Building Addition
4130 Albermarle Street NW, Washington, DC

THOMAS L BROWN ASSOC, P. C.
Washington, DC

Drawing No: 3

11X17 STRATIGRAPHY W GW BORING LOGS.PPJ MDSHA-MEHRDEN.GDT 1/14/10

APPENDIX A

RESULTS OF FIELD TESTING

Records of Soil Exploration

THOMAS L. BROWN ASSOCIATES, P.C.
Washington, DC

RECORD OF SOIL / ROCK EXPLORATION

Contracted With: Devrouax & Purnell Architects - Planners, PC — Boring # B-1
Project Name: Janney Elementary School - Building Addition — Job # 09-052
Location: 4130 Albermarle Street NW, Washington, DC

SAMPLER

Datum: — Hammer Wt.: 140 lb — Hole Diameter: 4 in — Foreman: T. Brown
Surf. Elev.: 389.0 ± ft — Hammer Drop: 30 in — Rock Core Dia.: N/A — Inspector: M. Mkwayaya
Date Started: 12/11/09 — Spoon Size: 2 in — Boring Method: HSA — Date Completed: 12/11/09

ELEV. (ft)	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH (ft)	SOIL SYMBOL	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec (in)	BORING & SAMPLE NOTES
388.8	3 inches of **TOPSOIL**	0.3			D	3-3-3	1	DS	10	1. No water encountered.
387.0	Dark brown, moist, loose, silty fine to medium **SAND**, some gravel, some roots (SM), **(FILL)**	2.0			D	3-3-4	2	DS	14	2. Auger Refusal at 8.5 feet. Possible boulder.
385.0	Yellow brown, moist, loose, **SAND**, some clay, some gravel, **(SC)**	4.0		5	D	10-9-8	3	DS	10	3. Offset 5 feet to B-1A
380.0	Yellow brown, moist, medium dense to dense, silty **GRAVEL**, some sand, **(GM)**	9.0			D	12-20-16	4	DS	16	4. Drilled with Acker Soil Scout
	Bottom of Boring at 9.0 ft			10						5. Safety Hammer
				15						6. Boring backfilled with auger cuttings
				20						
				25						
				30						
				35						
				40						
				45						

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUNDWATER DEPTH
AT COMPLETION Dry ft
AFTER _____ HRS. _____ ft
AFTER 24 HRS. _____ ft
CAVED AT _____ ft

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

STANDARD PENETRATION TEST DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

THOMAS L. BROWN ASSOCIATES, P.C.
Washington, DC

RECORD OF SOIL / ROCK EXPLORATION

Contracted With: Devrouax & Purnell Architects - Planners, PC — Boring # B-1A
Project Name: Janney Elementary School - Building Addition — Job # 09-052
Location: 4130 Albermarle Street NW, Washington, DC

SAMPLER

Datum: — Hammer Wt.: 140 lb — Hole Diameter: 4 in — Foreman: O. Gomez
Surf. Elev.: 390.0 ± ft — Hammer Drop: 30 in — Rock Core Dia.: N/A — Inspector: R. Robertson
Date Started: 12/11/09 — Spoon Size: 2 in — Boring Method: HSA — Date Completed: 12/12/09

ELEV. (ft)	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH (ft)	SOIL SYMBOL	DEPTH SCALE	SAMPLE Cond	SAMPLE Blows/6"	SAMPLE No.	SAMPLE Type	SAMPLE Rec (in)	BORING & SAMPLE NOTES
389.8	3 inches of **TOPSOIL**	0.3								1. No water encountered.
	Yellow brown, moist, **SAND**, some clay, some gravel, **(SC)**			5						2. Auger probe from 0 - 10 feet
380.0		10.0		10						3. Drilled with Acker Soil Scout
	Yellow brown, moist, stiff, **SILT**, **(ML)**				I/D	3-3-5	5	DS	18	4. Safety Hammer
378.0		12.0								5. Boring backfilled with auger cuttings
	Orangish brown, moist, loose, **SAND**, some clay, **(SC)**			15	I/D	3-4-4	6	DS	18	
373.5		16.5								
	Brown, wet, medium dense, fine to medium **SAND**, some silt, little mica, **(SM)**			20	I/D	5-5-10	7	DS	18	
368.0		22.0								
	Brown and gray, moist, hard, **SILT**, some fine sand, little mica, **(ML)**			25	I/D	32-28-40	8	DS	16	
					I/D	50/5"	9	DS	5	
360.0		30.0		30						
	Bottom of Boring at 30.0 ft			35						
				40						
				45						

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUNDWATER DEPTH
AT COMPLETION Dry ft
AFTER _____ HRS. _____ ft
AFTER 24 HRS. _____ ft
CAVED AT _____ ft

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

STANDARD PENETRATION TEST DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

THOMAS L. BROWN ASSOCIATES, P.C.
Washington, DC

RECORD OF SOIL / ROCK EXPLORATION

Contracted With: Devrouax & Purnell Architects - Planners, PC — Boring # B-2
Project Name: Janney Elementary School - Building Addition — Job # 09-052
Location: 4130 Albermarle Street NW, Washington, DC

SAMPLER

Datum: — Hammer Wt.: 140 lb — Hole Diameter: 4 in — Foreman: O. Gomez/ M. Seward
Surf. Elev.: 403.5 ± ft — Hammer Drop: 30 in — Rock Core Dia.: N/A — Inspector: M. Mkwayaya/ R. Robertson
Date Started: 12/11/09 — Spoon Size: 2 in — Boring Method: HSA — Date Completed: 12/12/09

ELEV. (ft)	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH (ft)	SOIL SYMBOL	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec (in)	BORING & SAMPLE NOTES
403.3	3 inches of **TOPSOIL**	0.3				3-7-7	1	DS	10	1. No water encountered.
	Red brown, moist, loose to medium dense, fine to medium **SAND**, some clay, **(FILL)**					2-3-2	2	DS	10	2. Drilled with Acker AD-II rig
398.5		5.0		5						3. Safety Hammer
396.5	Dark brown, moist, loose, fine to medium **SAND**, some silt, trace roots, **(FILL)**	7.0				3-3-3	3	DS	3	4. Boring backfilled with auger cuttings
	Red brown, moist, loose, fine to medium **SAND**, some clay, **(FILL)**					3-3-3	4	DS	10	
393.5		10.0		10						
	Yellow brown, moist, medium stiff, sandy lean **CLAY**, with gravel, **(CL)**					2-3-4	5	DS	12	
390.5		13.0								
388.5	Brown, moist, very dense, **GRAVEL**, some fine to medium sand, **(GP)**	15.0		15		34-35-27	6	DS	18	
	Yellow brown, moist, dense, fine to medium **SAND**, some clay, **(SC)**									
383.5		20.0		20		10-14-17	7	DS	18	
	Light brown, moist, hard, **SILT**, some clay, **(ML)**									
				25	I/D	10-14-17	8	DS	15	
377.0		26.5								
	Brown and gray, moist, very dense, **SAND**, some clay, micaceous, **(SC)**									
373.5		30.0		30		22-24-37	9	DS	18	
	Bottom of Boring at 30.0 ft									
				35						
				40						
				45						

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUNDWATER DEPTH
AT COMPLETION Dry ft
AFTER _____ HRS. _____ ft
AFTER 24 HRS. _____ ft
CAVED AT 28.0 ft

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

STANDARD PENETRATION TEST DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

THOMAS L. BROWN ASSOCIATES, P.C.
Washington, DC

RECORD OF SOIL / ROCK EXPLORATION

Contracted With: Devrouax & Purnell Architects - Planners, PC — Boring # B-3
Project Name: Janney Elementary School - Building Addition — Job # 09-052
Location: 4130 Albermarle Street NW, Washington, DC

SAMPLER

Datum: — Hammer Wt.: 140 lb — Hole Diameter: 4 in — Foreman: O. Gomez
Surf. Elev.: 394.5 ± ft — Hammer Drop: 30 in — Rock Core Dia.: N/A — Inspector: R. Robertson
Date Started: 12/12/09 — Spoon Size: 2 in — Boring Method: HSA — Date Completed: 12/12/09

ELEV. (ft)	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH (ft)	SOIL SYMBOL	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec (in)	BORING & SAMPLE NOTES
394.3	2 inches of **TOPSOIL**	0.2			I/D	5-3-6	1	DS	10	1. No water encountered.
392.5	Brownish gray, moist, stiff, **SILT**, some fine sand, trace clay, **(FILL)**	2.0			D	8-8-9	2	DS	2	2. Drilled with Acker Soil Scout
	Dark brown, moist, very stiff, **SILT**, little gravel, trace metal debris, **(FILL)**			5	I/D	10-10-8	3	DS	8	3. Safety Hammer
387.5		7.0								4. Boring backfilled with auger cuttings
	Brown, moist, dense to medium dense, **SAND**, some silt, little gravel, **(SM)**				D	7-21-24	4	DS	18	
				10	I/D	12-15-11	5	DS	10	
382.0		12.5								
	Brown to grayish brown, moist, stiff to hard, sandy elastic **SILT**, micaceous, **(MH)**			15	I	2-4-6	6	DS	18	
				20	D	5-8-10	7	DS	5	
				25	I/D	23-37-50	8	DS	17	
367.5		27.0								
	Brownish gray, moist, hard, **SILT**, some fine sand, little gravel, **(ML)**									
364.5		30.0		30	D	23-30-40	9	DS	10	
	Bottom of Boring at 30.0 ft									
				35						
				40						
				45						

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUNDWATER DEPTH
AT COMPLETION Dry ft
AFTER _____ HRS. _____ ft
AFTER 24 HRS. _____ ft
CAVED AT _____ ft

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

STANDARD PENETRATION TEST DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

THOMAS L. BROWN ASSOCIATES, P.C.
Washington, DC

RECORD OF SOIL / ROCK EXPLORATION

Contracted With: Devrouax & Purnell Architects - Planners, PC — Boring # B-4
Project Name: Janney Elementary School - Building Addition — Job # 09-052
Location: 4130 Albermarle Street NW, Washington, DC

SAMPLER

Datum: — Hammer Wt.: 140 lb — Hole Diameter: 4 in — Foreman: O. Gomez
Surf. Elev.: 398.0 ± ft — Hammer Drop: 30 in — Rock Core Dia.: N/A — Inspector: R. Robertson
Date Started: 12/12/09 — Spoon Size: 2 in — Boring Method: HSA — Date Completed: 12/12/09

ELEV. (ft)	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH (ft)	SOIL SYMBOL	DEPTH SCALE	SAMPLE Cond	SAMPLE Blows/6"	SAMPLE No.	SAMPLE Type	SAMPLE Rec (in)	BORING & SAMPLE NOTES
397.8	2 inches of **TOPSOIL**	0.2			I/D	2-3-2	1	DS	10	1. No water encountered.
396.0	Dark brown, moist, loose, fine to medium **SAND**, some silt, **(SM)**	2.0			I/D	8-2-2	2	DS	10	2. Drilled with Acker Soil Scout
393.5	Brown, moist, loose, fine to medium **SAND**, some clay, little gravel, **(SC)**	4.5		5	I/D	3-4-5	3	DS	10	3. Safety Hammer
	Reddish brown, moist, stiff to hard, **SILT**, some fine sand,little gravel, some mica, **(ML)**				I/D	7-10-8	4	DS	8	4. Boring backfilled with auger cuttings
				10	I/D	18-21-21	5	DS	14	
385.5	Brown, moist, medium stiff, elastic **SILT**, little fine sand, **(MH)**	12.5		15	I	5-4-4	6	DS	18	
381.0	Brown to grayish brown, moist, very stiff to hard, elastic **SILT**, little fine sand, trace mica, **(MH)**	17.0		20	I/D	9-9-10	7	DS	14	
				25	I/D	7-10-13	8	DS	18	
368.0	Bottom of Boring at 30.0 ft	30.0		30	I/D	43-49-30	9	DS	14	
				35						
				40						
				45						

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUNDWATER DEPTH
AT COMPLETION Dry ft
AFTER _____ HRS. _____ ft
AFTER 24 HRS. _____ ft
CAVED AT _____ ft

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

STANDARD PENETRATION TEST DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

THOMAS L. BROWN ASSOCIATES, P.C.
Washington, DC

RECORD OF SOIL / ROCK EXPLORATION

Contracted With: Devrouax & Purnell Architects - Planners, PC — Boring # B-5
Project Name: Janney Elementary School - Building Addition — Job # 09-052
Location: 4130 Albermarle Street NW, Washington, DC

SAMPLER

Datum: — Hammer Wt.: 140 lb — Hole Diameter: 4 in — Foreman: W. Smith
Surf. Elev.: 395.5 ± ft — Hammer Drop: 30 in — Rock Core Dia.: N/A — Inspector: E. Assam
Date Started: 12/12/09 — Spoon Size: 2 in — Boring Method: HSA — Date Completed: 12/12/09

ELEV. (ft)	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH (ft)	SOIL SYMBOL	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec (in)	BORING & SAMPLE NOTES
395.2	4 inches of **TOPSOIL**	0.3			I/D	1-2-3	1	DS	16	1. Water encountered at 27.0 ft.
	Brown, moist, medium stiff to soft, **SILT**, trace fine sand, trace wood chips (ML), **(FILL)**				L	2-2-2	2	DS	0	2. Drilled with Truck mounted CME 45C
391.0		4.5		5	D	1-2-2	3	DS	3	3. Automatic Hammer
	Reddish brown, moist, very loose to loose, clayey **SAND**, some gravel, **(SC)**									4. Boring backfilled with auger cuttings
384.8		10.8		10	D	6-4-4	4	DS	10	
	Reddish brown to gray, moist to wet, stiff to hard, **SILT**, some mica, **(ML)**			15	I/D	4-5-7	5	DS	18	
				20	D	8-13-19	6	DS	18	
				25	D	9-14-36	7	DS	18	
365.5		30.0		30	D	10-23-50/5"	8	DS	18	
	Bottom of Boring at 30.0 ft			35						
				40						
				45						

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUNDWATER DEPTH
AT COMPLETION Dry ft
AFTER ____ HRS. ____ ft
AFTER 24 HRS. ____ ft
CAVED AT 3.0 ft

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

STANDARD PENETRATION TEST DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

THOMAS L. BROWN ASSOCIATES, P.C.
Washington, DC

RECORD OF SOIL / ROCK EXPLORATION

Contracted With: Devrouax & Purnell Architects - Planners, PC — Boring # B-6
Project Name: Janney Elementary School - Building Addition — Job # 09-052
Location: 4130 Albermarle Street NW, Washington, DC

SAMPLER

Datum: — Hammer Wt.: 140 lb — Hole Diameter: 4 in — Foreman: M. Seward
Surf. Elev.: 403.5 ± ft — Hammer Drop: 30 in — Rock Core Dia.: N/A — Inspector: R. Robertson
Date Started: 12/12/09 — Spoon Size: 2 in — Boring Method: HSA — Date Completed: 12/12/09

ELEV. (ft)	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH (ft)	SOIL SYMBOL	DEPTH SCALE	SAMPLE Cond	SAMPLE Blows/6"	SAMPLE No.	SAMPLE Type	SAMPLE Rec (in)
403.0	6 inches of **ASPHALT**	0.5							
	Reddish brown, moist, medium stiff to soft, **CLAY**, some fine to coarse sand, trace gravel, trace silt, **(CL)**				I/D	4-4-3	1	DS	10
					I/D	4-4-6	2	DS	10
				5	I/D	3-2-2	3	DS	10
396.0		7.5							
	Brown, moist, medium dense to dense, fine to medium **SAND**, some clay, little gravel, **(SC)**			10	I/D	4-10-22	4	DS	14
				15	I/D	13-12-16	5	DS	12
				20		14-25-35	6	DS	15
382.0		21.5							
	Brown, wet, stiff, **SILT**, **(ML)**			25	I/D	8-8-4	7	DS	18
377.0		26.5							
	Brown, wet, very stiff, **CLAY**, some fine sand, **(CL)**								
373.5		30.0		30	I/D	7-7-13	8	DS	18
	Bottom of Boring at 30.0 ft			35					
				40					
				45					

BORING & SAMPLE NOTES

1. No water encountered.
2. Drilled with Acker Soil Scout
3. Safety Hammer
4. Boring backfilled with auger cuttings and patched with asphalt

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUNDWATER DEPTH
AT COMPLETION Dry ft
AFTER _____ HRS. _____ ft
AFTER 24 HRS. _____ ft
CAVED AT _____ ft

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

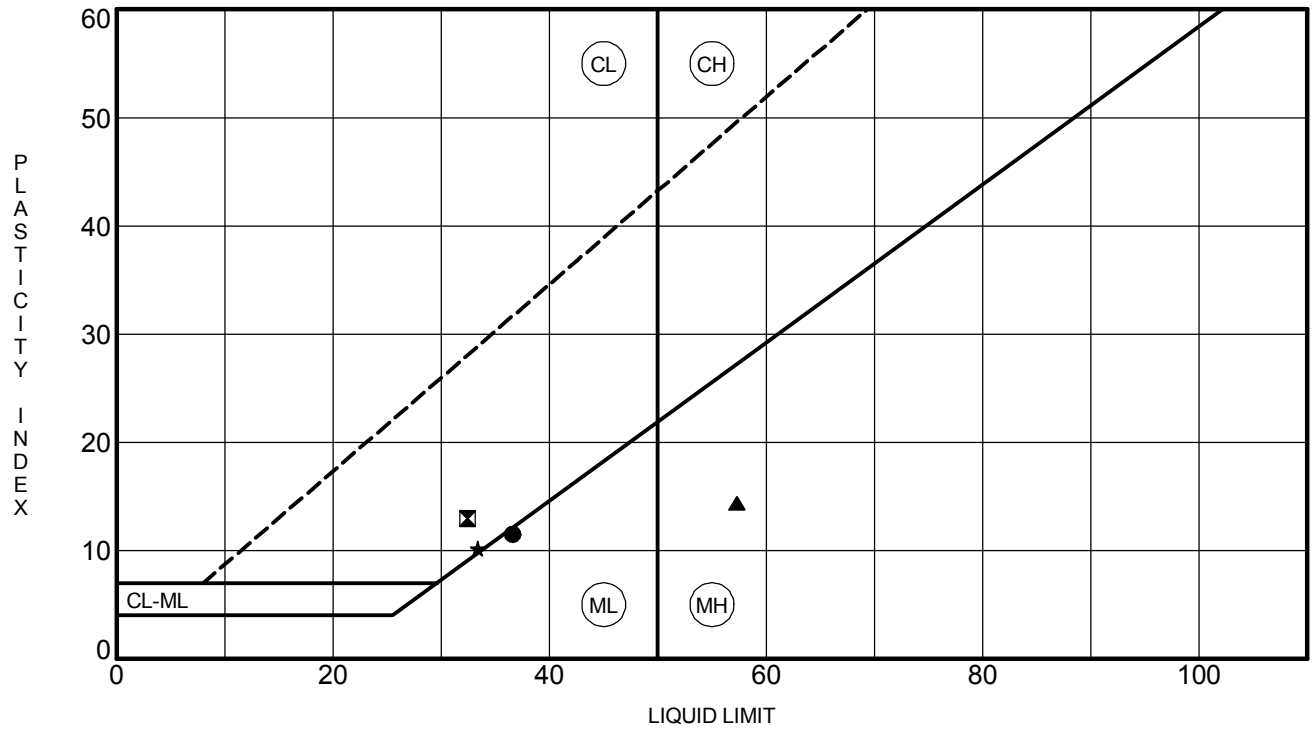
STANDARD PENETRATION TEST DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

APPENDIX B

LABORATORY TEST RESULTS

Boring	Depth (ft)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% < #4 Sieve	% < #200 Sieve	Classification	Water Content (%)
B-1	5.0-6.5				47	15	GM	5.9
B-1A	10.0-11.5	37	25	12			ML	24.2
B-2	10.0-11.5	32	19	13	81	51	CL	15.5
B-3	2.5-4.0							3.4
B-3	13.5-15.0	57	43	14	100	63	MH	21.7
B-4	5.0-6.5							19.2
B-5	5.0-6.5	33	23	10	92	49	SC	18.4
B-6	2.5-4.0							13.9

Atterberg Limits



	Boring	Depth	LL	PL	PI	Fines	Classification
●	B-1A	10.0-11.5	37	25	12		Brown, **SILT (ML)**
⊠	B-2	10.0-11.5	32	19	13	51	Brown, Sandy Lean **CLAY** with gravel **(CL)**
▲	B-3	13.5-15.0	57	43	14	63	Yellowish Brown, Sandy Elastic **SILT (MH)**
★	B-5	5.0-6.5	33	23	10	49	Brown, Clayey **SAND (SC)**

Test Method:

Tested By: _____ Date: 12/22/2009

THOMAS L. BROWN ASSOCIATES, P.C.
Washington, DC

ATTERBERG LIMITS' RESULTS

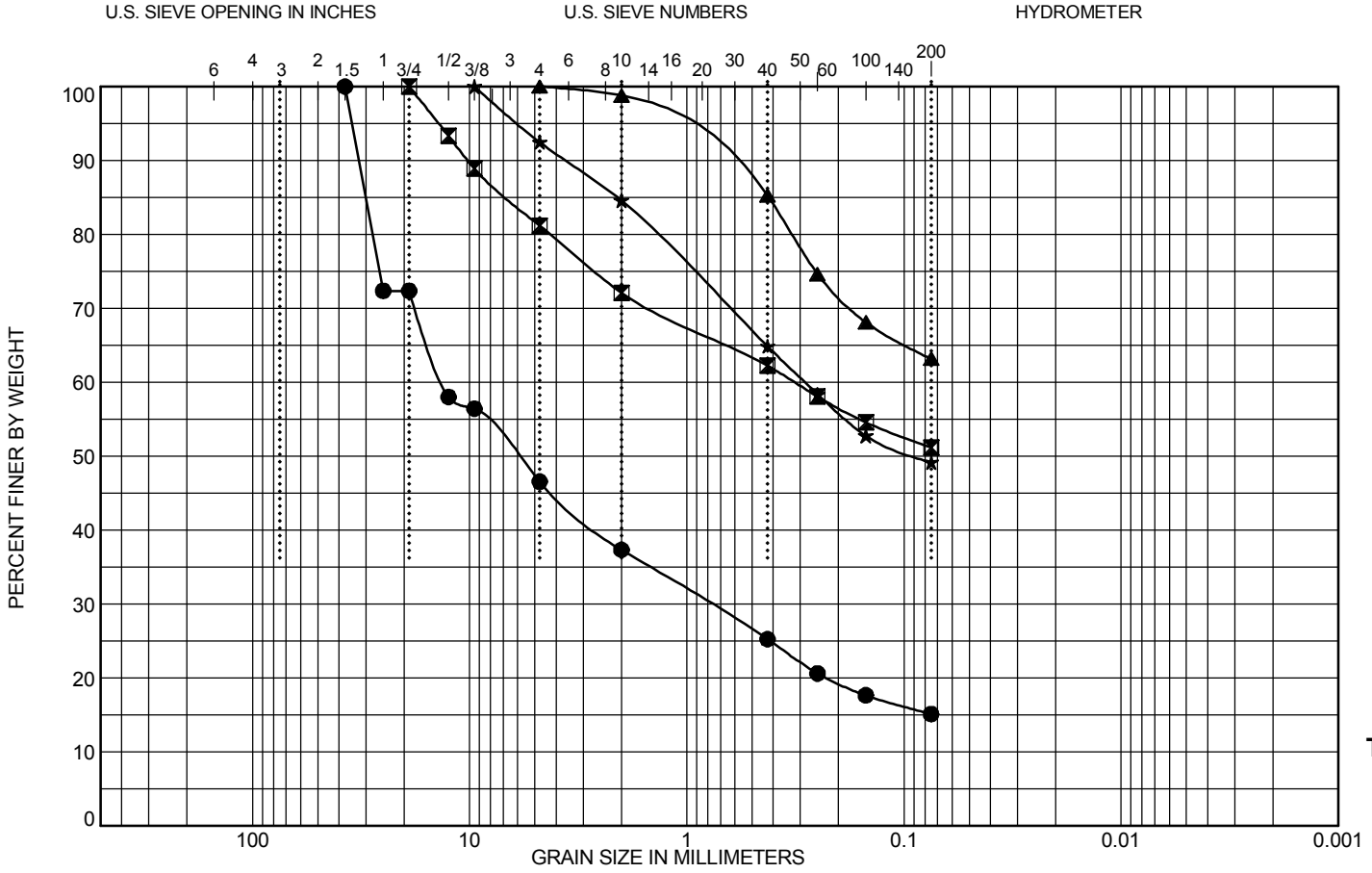
Project: Janney Elementary School - Building Addition

Location: Northwest, Washington, D.C.

Project Number: 09-052

TLB ATTERBERG_LIMITS COPY OF HES1.GPJ TLB2009.GDT 2/23/10

Gradation Analysis Curves



	D10	D30	D60	D100
●		0.781	13.247	37.5
⊠			0.32	19
▲				4.76
★			0.285	9.5

Test Method: ASTM D422

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Tested By: MED Date: 12/23/2009

	Boring	S No.	Depth	%Gravel	%Sand	%Silt	%Clay	LL	PI	MC(%)	Classification
●	B-1	S-3	5.0-6.5	53.5	31.4	15.1				5.9	Brown, silty **GRAVEL** with sand **(GM)**
⊠	B-2	S-5	10.0-11.5	18.8	30.0	51.2		32	13	15.5	Brown, Sandy Lean **CLAY** with gravel **(CL)**
▲	B-3	S-6	13.5-15.0	0.0	36.8	63.2		57	14	21.7	Yellowish Brown, Sandy Elastic **SILT (MH)**
★	B-5	S-3	5.0-6.5	7.5	43.3	49.2		33	10	18.4	Brown, Clayey **SAND (SC)**

THOMAS L. BROWN ASSOCIATES, P.C.
Washington, DC

GRAIN SIZE DISTRIBUTION

Janney Elementary School - Building Addition

Northwest, Washington, D.C.

Project Number: 09-052